9
69P

THE PLANT DISEASE REPORTER

Issued By

The Plant Disease Survey

LIBRARY
RECEIVED
★ JUL 18 1924 ★
U.S. Department of Agriculture

Volume VIII Number 3

July 15, 1924

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

Issued by

THE PLANT DISEASE SURVEY

Vol. VIII July 15, 1924 Number 3

SYCAMORE BLIGHT

More notes have come in concerning the outbreak of sycamore blight, caused by Gnomonia veneta. J. Franklin Collins, located at Providence, Rhode Island, wrote on June 26:

> "Within the last few days we have had a tremendous influx of letters concerning the sycamore blight, which shows that it is very prevalent in Pennsylvania, New York, Virginia, New Jersey, Ohio, Illinois, and Texas."

Other reports are as follows:

Massachusetts: The most severe outbreak of this disease since 1907. Reports from all parts of the State indicate that the sycamore is seriously affected. Many trees have been almost defoliated by it. (Osmun, July 1)

Connecticut: Very prevalent in the vicinity of Clinton, Middlesex County, Connecticut, where it was defoliating the trees, early in July. Also noted on Long Island, New York, and in Massachusetts. (Humphrey, July 8)

New York: Sycamore blight is affecting trees in this section. (Tyler, June 23, Nassau County)

Illinois: Sycamore all over the southern half of the state suffered from anthracnose to the extent of having 30 to 95% of the twigs killed. (Young, June 24)

MORE NOTES ON POWDERY MILDEW OF RED CLOVER

Massachusetts: Strict search was made for powdery mildew (Erysiphe polygoni) on red clover, and I found the first specimen June 16, on Trifolium pratense. This was among plants in a plat highly infected in 1923. On June 18 I found several infected red clover plants in the edge of timber where I first located the organism in 1923. Neither Plantago nor Taraxacum are infected at this time here. (Davis, July 7)

New York: Genesee & Orleans Counties - Observed July 4 in an orchard and has not been seen elsewhere. (Felix, July 7)

Illinois: Mildew of red clover is much lighter than in 1922 and 1923. It was just appearing in the counties just south of Decatur on June 3 - June 7. In the southern tip of the state now most of the clover is more or less heavily mildewed. In general, in the belt 100 miles south of Decatur, mildew is rather light. (Young, June 24)

NOTES ON BARLEY DISEASES

A. G. Johnson, returning on July 4 from a trip in some of the North-central states, reports:

"In Wisconsin and Minnesota the spring conditions have been very favorable for the development of the stripe disease of barley. In Wisconsin barley scald (Rhynchosporium secalis) was found more abundant in certain fields than it has been noted in that state before."

CROWN RUST ON RHAMNUS

First infections of Rhamnus cathartica by crown rust (Puccinia coronata) were reported in Massachusetts June 9, by W. H. Davis, and in Wisconsin June 5, by R. E. Vaughan. A. H. Gilbert, in Vermont, also reports an abundance of infection of Rhamnus in the vicinity of Burlington.

HALO BLIGHT OF OATS

Specimens of halo blight of oats, caused by Bacterium coronafaciens, have been received recently from New Jersey and Kentucky, and reports come from Illinois that it is present on most of the plants in the majority of the fields in the southern half of the state, and from South Dakota that it is abundant in the vicinity of Brookings.

RHYNCHOSPORIUM ON RYE

Rhynchosporium secalis is being collected on rye this year in Wisconsin. This is not a serious disease of rye and it is not very common on that crop. However, it would be well for pathologists to watch for it and to collect specimens for verifying any reports.

WHEAT SCAB

A report on wheat scab is at hand from Illinois. Notes from pathologists in other states concerning the prevalence of this disease this year are desired.

Illinois: Infestations of 1/10 to 1% wheat scab were noticed in many fields in southern Illinois. Today, I saw 10% of the heads in one field infected. (Young, June 24)

LOOSE SMUT OF WHEAT

New York: Several fields of wheat have been inspected for loose smut. As high as 16 to 20% noted in some fields and as low as 1/2% in others. (Ward, June 30)

Arkansas: Very common and destructive. (Young, June 15)

Illinois: Loose smut has been reported present in fields, and has been found by survey workers, since May 28. It does not appear to be very much worse this year than usual. The average infection ranges around 1 per cent, with rare instances running up to two and even five per cent. In one instance a 35 acre field of Metchikoff wheat had from 10 to 15 per cent of the heads smutted. (Tehon, June 18)

Ohio: Loose smut of wheat appears very abundant this spring. The few counts I have made so far, however, show only 5 to 8% of the heads affected. R. A. Dobbins, however, reports 8 to 10% in counties northwest of Columbus. The county agent in Pike County reports having counted 25% loose smut in one field. (Stover, June 19)

South Dakota: Some present in early fields. (Evans, July 1)

LEAF RUST OF WHEAT IN TEXAS, OKLAHOMA, AND KANSAS

C. O. Johnston, after a trip through Oklahoma, and experience in Kansas, wrote as follows on June 25, concerning the leaf rust situation:

"A uniform but not extremely heavy epidemic of leaf rust was found at Denton, Texas. A slightly heavier infection occurred at Temple, Texas. At both of these stations a number of pure lines of Mediterranean showed marked resistance to leaf rust. Northern Oklahoma has very little leaf rust, there being about twenty percent on susceptible varieties. Southern Kansas has even less rust, few leaves being found with more than ten percent of rust. There is practically no leaf rust in eastern, central or western Kansas. Extremely dry

weather during April and May is probably responsible for this condition. This is the first year since 1918 that this condition has existed. For the first time I have had great difficulty producing an artificial epidemic in my leaf rust nursery here at Manhattan."

STEM RUST OF WHEAT

Illinois: I have now seen black stem rust in Gallatin County, (June 12), Jackson, Pulaski and Marion Counties. In each case the infections were limited to a few stalks in one or two places in the fields. The pustules generally started near the ground. No rusted barberries were known to be within many miles of these fields. Though a black stem rust epiphytotic existed here last year it is becoming apparent that this disease will probably assume no significance this year. (Young, June 24)

According to Gordon C. Curran a trace of stem rust infection was found on wheat near Mound City, Pulaski County, June 21. The rust infection was very light, hard to find, and the wheat was being cut. A similar very light infection was found in one spot near Marion, Williamson County on June 23 and a trace of stem rust infection was found on oats in Champaign County June 27. (Tehon)

South Dakota: Several specimens found on leaf and sheath. None on stem yet. (Evans, July 1)

Nebraska: The winter wheat will all be harvested this week free from any damage by black stem rust. The stem rust was about two weeks later than usual in making its appearance from overwinter spores from the South. On account of dry weather conditions in April, barberries failed to rust generally. The few light infections which did occur early developed very slowly and could only be traced with difficulty to cereals. The numerous rains during June brought out new infections on the barberries which of course were too late to do any damage to wheat. In the spring wheat section of the state the weather conditions have been very dry and the rust which is present is developing very slowly and I am sure there will be little if any damage to the spring wheat. (Thiel, July 9)

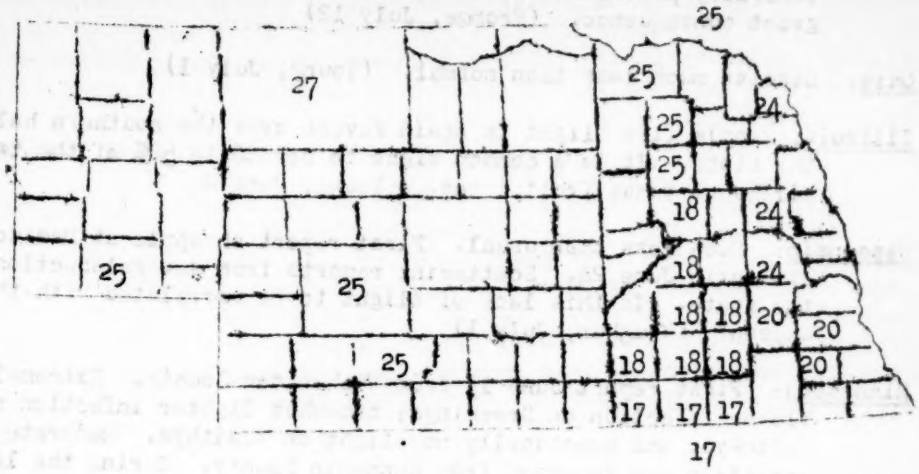

Fig. 3. Dates (June) of first appearance of stem rust in Nebraska counties. After map by A. F. Thiel.

FLAX WILT AND PASMO

"At Fargo, North Dakota, flax wilt was developing abundantly in susceptible varieties of flax while resistant varieties were progressing favorably. Pasmo was beginning to develop on young flax plants growing near old pasmo-infested flax straw. At Brookings, South Dakota, no pasmo was noted on the plat of flax sown with pasmo-infested seed treated with formaldehyde. Untreated controls were purposely not placed at Brookings because it is hoped to secure disease-free seed of this strain of flax." (A. G. Johnson, Cereal Courier 16, July 10, 1924)

FIRE BLIGHT ON APPLES

The following reports indicate only comparatively slight amounts of fire blight in some of the more northern states, thus far this season.

New York: Nassau County - appearing in apple plantings now. Genessee & Orleans Counties - present on apples to a slight extent. Ontario County - noticed in several orchards. Monroe County - has appeared in apple orchards but to date none has been observed in the nursery. Tompkins County - severe blossom infection observed on Fall Pippin July 1. (Reports from correspondents of New York State Coll. Agr. Dept. Ent. & Pl. Path. Weekly News Letter, July 7).

New Jersey: First reported on June 17 from Middlesex County. (Dept. of Plant Pathology, July 1)

Virginia: Fire blight is present about the same intensity as in 1923. Generally prevalent but losses for the state will not be of great consequence. (Fromme, July 12)

Ohio: Disease much less than normal. (Young, July 1)

Illinois: Apple fire blight is again severe over the southern half of the state. It is a common sight to see 40 to 50% of the twigs killed on these fruit trees. (Young, June 24)

Wisconsin: Much less than usual. First report on apple at Madison, Wisconsin June 24. Scattering reports from several sections of the state. Is this lack of blight to be correlated with the cool season? (Vaughan, July 1)

Minnesota: First report June 19 from Washington County. Extremely heavy flower infection on Greenings; somewhat lighter infection on Whitneys, and practically no blight on Wealthys. Moderate twig infection was reported from Hennepin County. During the latter part of June the disease was reported present in Dakota and Sherburne Counties. (Sect. Plant Path., July 1)

South Dakota: Noted on a few trees in college orchard. (Evans, July 1)

CEDAR RUST REPORT FROM VIRGINIA AND WEST VIRGINIA

Virginia: Cedar rust is unusually prevalent this year. Foliage on severely infested trees is markedly yellow at this time and defoliation will result shortly. Marked contrast is seen between localities where red cedars have been removed and those in which there has been no concerted eradication. In the former localities the losses will be of slight importance. (Fromme, July 12)

West Virginia: Rust is more prevalent than it has been for several years. Young rust galls which will be matured in 1925 were found on June 25. (Giddings, June 26)

BITTER ROT REPORTED FROM VIRGINIA AND NORTH CAROLINA

Virginia: Bitter rot is making its appearance in the Piedmont and Valley sections. Initial infection is rather plentiful and if the seasonal conditions continue to be favorable it will require thorough and frequent spray applications to hold it in check. (Fromme, July 12)

North Carolina: Bitter rot of the apple was noted in unsprayed orchards during the latter part of June. Its appearance at this time necessitates careful summer spraying for the mid-summer and fall varieties. (Fant, July 5)

BLACK ROT LEAFSPOT OF APPLE

The accompanying reports indicate the prevalence of black rot leafspot on apples. Statements from field assistants of the New York State College of Agriculture, located in important fruit counties, also indicate that this disease is common in that state.

New Jersey: More abundant than at any time in the past five years. First reported from Cumberland County on May 6. Since this first report the disease has been found in all parts of the state. In one orchard in Burlington County the Hagloe, Red Astrakhan, Baldwin, Ben Davis were 50% defoliated by June 24. In another orchard some defoliation was found on the Starr variety. In a third orchard thorough spraying with concentrated lime-sulfur failed to control leafspot on the Rome beauty. (Dept. of Plant Pathology, July 1)

West Virginia: Black rot leafspot is developing to a very large extent in unsprayed orchards. Very prevalent. (Giddings, June 28)

Tennessee: Some black rot leafspot has been observed, especially on trees which have been poorly sprayed, but in the majority of commercial orchards black rot is well under control. (McClintock, June 16)

Arkansas: Very common, especially on unsprayed orchards. Season very favorable. (Young, June 15)

Ohio: Leafspot infections quite general in older orchards. (Young, July 1)

MORE APPLE SCAB REPORTS

Vermont: A series of careful observations made by Dr. Lutman on ascospore discharge of Venturia inaequalis this Spring have shown that the spores were discharged first May 13 to 15. The leaves at these dates were partly opened. The dates of the initial infections had not been previously determined for Vermont. (Gilbert, July 8)

Massachusetts: Ascospores first ejected April 30 (Middlesex County). The latter part of May unsprayed trees of the McIntosh variety showed about 25% leaf infection. Later considerable fruit infection appeared on the same trees. The disease is also prevalent on Baldwin. (Doran, July 1)

New York: The following notes from New York counties, published in the Weekly News Letter of the New York State Departments of Entomology and Plant Pathology, July 7, indicate the prevalence of apple scab in the state:

Chautauqua County - Apple scab is of course increasing but not at an alarming rate. (K. E. Paine)

Dutchess County - Apple scab spots have increased in numbers rapidly both on the foliage and fruit during the past ten days. (G. E. R. Hervey)

Genesee & Wyoming Counties - Apple scab can be seen on the fruit in nearly every orchard. (P. H. Allen)

Nassau County - Apple scab is common and is spreading rapidly to the young fruit. (L. C. Tyler)

Onondaga County - Scab infection not very bad on the fruit where the first summer application was made a week or ten days after the calyx application. Foliage on such varieties as McIntosh and other susceptible varieties show heavy scab infection. Apparently considerable infection took place during blossoming. (D. D. Ward)

Ontario County - Secondary infections of scab on fruit are noticed frequently, especially bad in poorly sprayed orchards. (J. E. Connolly)

Orleans County - Scab is very severe and a spray was recommended last week and we expect to recommend another application when the codling moth begin to hatch freely. (R. G. Palmer)

Tompkins County - Apple scab prevalent on the fruit. (W. L. Norman)

Ulster County - Apple scab has probably spread but little due to short duration of rains and rapid drying afterwards. (C. C. Wagoner)

Wayne County - Scab is appearing on fruit and pedicels. Heavy wind storms of June 20 and 29 did severe damage in old orchards, and blew off over half of the scabby leaves in orchards where counts have been made. (W. D. Mills)

Monroe County - Sprays and dusts have been very effective so far in controlling scab. (A. L. Pierstorff)

New Jersey: In one orchard in Ocean County the Winesap variety was practically defoliated while the Yellow Transparent, Grimes Golden, and York Imperial were only slightly affected. In another orchard sprayed 4 times with a barrel sprayer complete defoliation was observed in the Mackintosh and heavy defoliation on the Winesap. In a third orchard heavy scab infection was observed on Grimes, Ben Davis and Red Astrakhan. In a fourth orchard in the same locality, sprayed on the same date but with a power sprayer no scab was found. In Burlington County the heavy infestation was observed on the Rome Beauty. In Hunterdon County in Northern Jersey in a demonstration orchard a trace of scab was observed, in previous years infection was severe. Apple scab is more serious than it has been for a number of years in all parts of the state, but as the reports above indicate, is particularly severe in the Southern counties. The first mature spots were found in Atlantic County on the Paragon on May 15. (Dept. of Plant Pathology, July 1)

Maryland: Severe outbreaks of scab developed late this year and there was little complaint until the fruit had set. However, since that time a number of severe outbreaks have occurred both in commercial and home grown orchards, and many fruits and leaves

are attacked. No orchards have been observed which were free from a moderate amount of scab, but the amount was least in orchards which were thoroughly sprayed at the proper time. In general, scab was controlled better where nozzles were used than with guns. (Jehle, June 27)

Virginia: One of the worst seasons for apple scab in my experience. Unsprayed trees show 100 percent infection at this time. Seasonal conditions have been unfavorable for spraying and the commercial crop will be damaged to a considerable degree. (Fromme, July 12)

West Virginia: Recently I have made a trip through the eastern part of the State and find a great amount of scab prevalent. In some orchards there is more scab than I have ever seen before, and the defoliation is already taking place to a large extent. This of course, is very exceptional and in orchards where they either had insufficient spray equipment or for some other reason, failed to make proper applications. The weather was so wet that some of the men reported spraying with water half way to their boot tops as they waded through the orchard and most of the men reported that the spray hardly had time to dry before there was further rain. Where spray was put on with reasonable care and at the times recommended, there seems to be very good control. (Giddings, June 28)

Arkansas: Somewhat more severe than last year. Favored by rainy cool spring. (Young, July 1)

Minnesota: Ascospores were being discharged at University Farm April 22. The first infections reported were on May 4 from Washington County on Virginia crab. Light infections were reported during the early part of June in Ramsey County, and heavy infections from Mower and Olmstead counties by the middle of June. (Section of Plant Pathology, July 1)

Ohio: In some sections of the state it has been very difficult to control scab. The disease will cause considerable loss in this state. The failure to control can be at least partially contributed to the lack of timing of pre-blossom sprays. (H. C. Young, July 1)

SPRAY INJURY TO APPLES

New York: - Onondaga County - Considerable burning of the foliage of apples is also reported, probably due largely to scab infection altho there are one or two instances where there is no scab but quite severe burning. (D. C. Ward, June 23)

Ulster County - Slight spray burn on fruit and foliage from lime sulfur common but not serious. (C. C. Wagoner, June 30)

New Jersey: Reports of severe spray burning following the use of both dry-mix and commercial lime sulfur have been received from North Jersey. (Dept. of Plant Pathology, July 1)

Ohio: Lime sulfur injury has been extremely severe throughout the state. It is the apparent cause for considerable dropping of fruit and also for partial defoliation of such varieties as the Stayman and Ben Davis. Where Bordeaux mixture was used burning is still more severe than the lime sulfur. There seems to be considerable scalding of apple leaves that have not been sprayed with anything. (H. C. Young, July 1)

PEACH LEAF CURL

Massachusetts: More than ordinarily severe throughout the State. Many orchards did not receive the dormant spray because of the probability of a light crop due to winter-killing of the buds and in such orchards the disease is usually very serious. (Osmun, July 1)

New York: The following reports are from the Weekly News Letter of the State College of Agriculture Departments of Entomology and Plant Pathology:

Chautauqua County - Many scattered trees and small orchards of peaches were either not sprayed at all or not sprayed on time and in these orchards peach leaf curl is now showing up in full force often nearly 100% infections. (K. E. Paine, June 9)

Monroe County - Peach leaf curl is very prominent in unsprayed orchards and many twigs show the injury even in sprayed ones. (R. C. Coombs, June 9)

Wayne County - Peach leaf curl has been very noticeable in poorly cared for orchards the past two weeks. (H. W. Fitch, June 9)

Albany County - Peach leaf curl is unusually abundant this season. (L. D. Kelsey, June 23)

Ontario County - Peach leaf curl is unusually severe where the spray was not timely and thoroughly applied. (J. E. Connolly, June 23)

New Jersey: More severe than usual. First collected at Vineland on May 6. Most abundant in Southern Counties along coast. (Dept. of Plant Pathology, July 1)

Delaware: First observation in the field May 6. Very severe and general infection found this season. Bud and twig infection very prevalent which will reduce the development of fruiting wood next season. Many growers were delayed in getting a timely dormant spray applied because of unfavorable weather conditions. (Adams)

Tennessee: In marked contrast to last season the peach trees, regardless of whether sprayed or not, are practically free from leaf

curl this season. Our results here check with those of Professor Mix relative to there being little or no rain at the time when infection was expected to occur. (McClintock, June 16)

South Carolina: Much worse than usual, being present to some extent even in properly sprayed orchards. (Ludwig, July 1)

Arkansas: Present over the state but not causing serious loss. Controlled in commercial orchards by spraying. (Young, July 1)

Ohio: This disease has been observed in great abundance from Marietta and Cincinnati to Columbus, and northwest to Fremont. The first date on which the disease was seen in abundance was May 13 near Lancaster. Undoubtedly defoliation of the peach will be quite severe. In one orchard observed on May 17, in which good spraying is practiced, no curl was seen. (Stover, June 19)

This disease is quite general throughout the state, especially in orchards that were not given a dormant spray. (H. C. Young, July 1)

INFORMATION ON SYCAMORE BLIGHT

The following article, just received through J. Franklin Collins of the Brown University Laboratory of the Office of Forest Pathology, will be helpful to pathologists when answering inquiries concerning sycamore blight that is so prevalent this year.

Sycamore Blight

by

Alma M. Waterman

The disease commonly known as the sycamore blight, caused by Gnomonia veneta, has been unusually prevalent this year in many states east of the Mississippi River, notably, Ohio, Pennsylvania, New Jersey, Illinois, and Virginia. It is, in fact, found as an epiphytotic in practically all regions where the sycamore is grown. The disease affects not only the common sycamore or buttonwood, but also the Oriental Plane tree. Certain oaks, particularly Quercus alba, Q. velutina, and Q. coccinea, are susceptible to the same injury. Although the blight has occurred to a slight extent every year in the eastern and central United States, the severity of the attack this spring appears to be due largely to the unusually moist weather conditions which prevailed during the period when the leaves were developing.

The sycamore blight injures the newly developed leaves and the young shoots. The new leaves just unfolding from the bud suddenly wither, become discolored, and finally blackened, giving the appearance of injury from frost. On the older leaves, the disease appears

as brown blotches or spots of irregular shape, located particularly along the veins. These spots increase in size, and eventually coalesce. Therefore, during moist weather conditions favorable for the spread of the disease, the greater part of the leaf tissue may become involved. In the severe cases which have attracted so much attention this spring, the affected leaves fall, and the tree becomes almost entirely defoliated. A second crop of leaves, however, may be produced later in the summer. Young twigs become infected probably through the leaf petioles. The progress of the disease in the woody parts, however, is much slower than in the leaf tissues and the twigs often do not show external indications of injury until the following spring when the new growth begins. Minute pustules then appear in the bark tissue and the twig is gradually killed. The dying back of the young twigs and the resulting abnormal branching produces a scraggly appearance, a conspicuous symptom of a tree which has suffered repeated attacks. This disfiguration of the affected trees causes no appreciable damage, but the continued defoliation in successive years and the severe dying back of the twigs eventually cause the death of the tree.

The fungus has been variously described under different names and has the following synonomy:

GNOMONIA VENETA (Sacc. & Speg.) Kleb. 1905.
Laestadia veneta (Sacc. & Speg.) Kleb. 1902.
Apiospora veneta Sacc. 1902
Gloeosporium nervisquum Sacc. 1882.
Fusarium nervisequum Fuckl. 1869-75.
Labrella ? nervisequum Fuckl.
Hymenula platani Lev. sec. Fuckl. 1848.
Gloeosporium platani (Mont.) Oud. 1867.
Fusarium platani Mont. 1856.
Gloeosporium valsoideum Sacc. 1882.
Myxosporium valsoideum (Sacc.) All. 1903.
Myxosporium platanicolum E. & E. 1894.
Hymenula ramulorum Passer. 1884.
Discula platani (Peck) Sacc. 1884.
Discella platani Oud. 1876-77.
Discella platani Peck 1872.
Sporonema platani Bäumler 1890.
Fusicoccum veronense C. Massalongo 1889.

According to Klebahn and Edgerton there are four conidial forms and an ascigerous stage as follows:

1. The Gloeosporium nervisequum form. This is the one commonly found upon the leaf blotches in acervuli just below the cuticle of the lower leaf surface. In a severe case of infection the acervuli are formed also on the upper surface. Under moist conditions, the spores exude in cream or amber-colored masses. The spores measure 9-15u by 4-6u, are hyaline, continuous, and rather piriform, and are borne on long conidiophores. The fungus not only attacks the leaves but also the petioles and it is probably for this reason that defoliation occurs.

2. The Gloeosporium platani form. This occurs also on the under

surface of the diseased areas just below the epidermis. The spores are very similar to those of Gloeosporium nervisequum but are produced on short conidiophores. Klebahn concluded that the differences were so slight that the two fungi might be considered identical.

3. The conidial form on the twigs previously designated as Discula platani and Myxosporium valsoideum. The type of fruiting body and spore is identical with that of Gloeosporium nervisequum. The fungus overwinters in the bark tissue and is probably the cause of the early appearance of the disease on the leaves in the following spring.

4. The conidial form which has been called Fusicoccum veronense and Sporonema platani. Pycnidia are produced on the lower surface of the fallen leaves during February or March. The spores are much the same as those of Gloeosporium nervisequum.

5. The ascigerous stage - Gnomonia veneta. This appears on the dead leaves which have remained on the ground during the winter.

The fungus may be abundant during a particular year if weather and other conditions are favorable for its growth, while under changed weather conditions the following year it may be inconspicuous or entirely absent.

As in the case of most tree diseases, methods of controlling the blight are rather expensive and usually somewhat difficult to carry out. However, the value of the tree for shade or ornamental purposes may warrant the necessary expense. As a first step in controlling the disease, the infected twigs should be carefully removed by pruning well back of the infected portion. All of these twigs, together with any fallen leaves and twigs, should be carefully collected and burned. They should not be thrown onto the rubbish heap, since that is often one of the most favorable places for the fungus to fruit. Its spores may then be carried to healthy trees which may thus become infected. After all the infected twigs are cut away the remainder of the tree should be sprayed with Bordeaux mixture in the proportions 4-4-50. A second or third application of a weaker solution of Bordeaux mixture may be necessary before midsummer to protect the new foliage. Again, in the autumn, it is advisable to rake up and burn all fallen leaves and twigs, since this tends to prevent the spread of any disease which may be present upon them.

Library, :.
U. S. Department of Agriculture,
Washington, D. C.